AMENDMENTS TO THE SPECIFICATION

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel claim 66, without prejudice or disclaimer.

In the claims:

1-51. (cancelled)

52. (previously presented) A method for producing a population highly enriched for human central nervous system stem cells (CNS-SC) which can initiate neurospheres (NS-IC), comprising:

selecting from a population containing neural or neural-derived cells for cells that bind to a first antibody selected from the group consisting of monoclonal antibody AC133 and monoclonal antibody 5E12, and further comprising the step of further enriching the population by selecting and eliminating from the population those cells that bind to a second antibody selected from the group consisting of a monoclonal antibody that binds to CD45 antigen and a monoclonal antibody that binds to CD34 antigen, such that those cells that are $AC133^{+}CD45^{-}$ or $AC133^{+}CD34^{-}$ or $5E12^{+}CD45^{-}$ or $5E12^{+}CD34^{-}$ are selected.

53. (previously presented) The method of claim 52, wherein said first antibody is monoclonal antibody AC133.

54. (previously presented) The method of claim 52, wherein said first antibody is monoclonal antibody 5E12.

55. (previously presented) The method of claim 52, wherein said second antibody is a monoclonal antibody that binds to CD45 antigen.

56. (previously presented) The method of claim 52, wherein said second antibody is monoclonal antibody that binds to CD34 antigen.

57. (previously presented) A method for producing a population highly enriched for human central nervous system stem cells (CNS-SC) which can initiate neurospheres (NS-IC), comprising:

selecting from a population containing neural or neural-derived cells for cells that bind to monoclonal antibody AC133 and monoclonal 5E12, and further comprising the step of further enriching the population by selecting and eliminating from the population those cells that bind to a monoclonal antibody that binds to CD45 antigen or monoclonal antibody that binds to CD34 antigen, such that those cells that are $AC133^{+}5E12^{+}CD45^{-}$ or $AC133^{+}5E12^{+}CD34^{-}$ are selected.

58. (previously presented) A method for producing a population highly enriched for human central nervous system stem cells (CNS-SC) which can initiate neurospheres (NS-IC), comprising:

selecting from a population containing neural or neural-derived cells for cells that bind to monoclonal antibody AC133 or monoclonal 5E12, and further comprising the step of further enriching the population by selecting and eliminating from the population those cells that bind to a monoclonal antibody that binds to CD45 antigen and a monoclonal antibody that binds to CD34 antigen, such that those cells that are $AC133^{+}CD45^{-}CD34^{-}$ or $5E12^{+}CD45^{-}CD34^{-}$ are selected.

59. (previously presented) A method for producing a population highly enriched for human central nervous system stem cells (CNS-SC) which can initiate neurospheres (NS-IC), comprising:

selecting from a population containing neural or neural-derived cells for cells that bind to monoclonal antibody AC133 and to monoclonal antibody 5E12, and further comprising the step of further enriching the population by selecting and eliminating from the population those cells that bind to a monoclonal antibody that binds to CD45 antigen and a monoclonal antibody that binds to CD34 antigen, such that those cells that are $AC133^{+}5E12^{+}CD45^{-}CD34^{-}$ are selected.

60. (previously presented) The method of any one of claims 52, 57, 58, or 59, further comprising the steps of: further enriching the population by selecting and eliminating from the population those cells that bind to monoclonal antibody 8G1.

61. (currently amended) The method of any one of claims 52, 57, 58, 59, or 60, wherein ~~said antibodies~~ all of the antibodies are fluorochrome conjugated.

62. (currently amended) The method of any one of claims 52, 57, 58, 59, or 60, wherein ~~said antibodies~~ all of the antibodies are conjugated to magnetic particles.

63. (previously presented) The method of any one of claims 52, 57, 58, 59, or 60, wherein the selecting is by flow cytometry.

64. (previously presented) The method of any one of claims 52, 57, 58, 59, or 60, wherein the selecting is by fluorescence activated cell sorting or high gradient magnetic selection.

65. (previously presented) The method of any one of claims 52, 57, 58, 59, or 60, wherein the population containing neural or neural-derived cells is obtained from any tissue which gives rise to neural tissue.

66. (cancelled)

67. (currently amended) The method of any one of claims 52, 57, 58, 59, or 60, wherein the population containing neural or neural-derived cells is dissociated from any tissue which gives rise to neural tissue.

68. (previously presented) The method of any one of claims 52, 57, 58, 59, or 60, wherein the population containing neural or neural-derived cells is derived from a fetal brain, adult brain, fetal spinal cord or adult spinal cord.

69. (previously presented) The method of any one of claims 52, 57, 58, 59, or 60, wherein the population containing neural or neural-derived cells is obtained from a neural cell culture.

70. (previously presented) The method of claim 69, wherein the population containing neural or neural-derived cells is obtained from a neurosphere culture or an adherent monolayer culture.

71. (currently amended) A method for producing a population enriched for human central nervous system stem cells (CNS-SC) which can initiate neurospheres (NS-IC), comprising selecting from a population of neural or neural-derived cells for cells that bind to monoclonal antibody AC133 or to monoclonal antibody 5E12 or to both monoclonal antibody AC133 and monoclonal antibody 5E12 ~~are AC133$^+$, 5E12$^+$, or AC133$^+$5E12$^+$~~, and further comprising the step of further enriching the population by selecting and eliminating from the population those cells that are $CD45^+$, $CD34^+$, or $CD45^+CD34^+$, wherein the resulting population is enriched for NS-IC as compared to the population of neural or neural-derived cells.

72. (currently amended) The method of claim 71, further comprising the step of further enriching the population by selecting and eliminating from the population those cells that bind to monoclonal antibody 8G1~~are 8G1$^+$~~.

73. (currently amended) A method for isolating a neurosphere initiating stem cell (NS-IC), comprising:

a) combining a population comprising neural cells or neural-derived cells containing a fraction of NS-ICs with monoclonal antibody AC133 or monoclonal antibody 5E12 or both;

b) selecting the cells that bind to monoclonal antibody AC133 or to monoclonal antibody 5E12 or to both monoclonal antibody AC133 and to monoclonal antibody 5E12 ~~AC133$^+$, 5E12$^+$, or AC133$^+$5E12$^+$ cells~~, wherein the selected cells are enriched in the fraction of NS-ICs as compared with the population of neural cells;

c) combining said enriched fraction obtained in step b) with a monoclonal antibody that binds to CD45 antigen or a monoclonal antibody that binds to CD34 antigen or both;

d) selecting and eliminating $CD45^+$, $CD34^+$, or $CD45^+CD34^+$ cells, wherein the remaining cells are further enriched in the fraction of NS-ICs as compared with the enriched fraction obtained in step b);

e) introducing at least one cell from the enriched fraction obtained in step d) ~~$AC133^+$ or $5E12^+$ or $CD45^-$ or $CD34^-$ cell~~ to a culture medium capable of supporting the growth of NS-IC; and

f) proliferating the ~~$AC133^+$ or $5E12^+$ or $CD45^-$ or $CD34^-$~~ introduced cell in the culture medium.

74. (previously presented) The method of claim 73, wherein the culture medium capable of supporting the growth of NS-IC comprises a growth factor selected from the group consisting of leukocyte inhibitory factor (LIF), epidermal growth factor (EGF), basic fibroblast growth factor (FGF-2) and combinations thereof.

75. (currently amended) The method of claim 73, wherein the culture medium capable of supporting the growth of NS-IC further comprises ~~a~~ neural survival factor, ~~(~~NSF~~)~~.